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One day I included a piece of *roasted Mutton* with a Gage, and found, that in *four* days it had yielded no Air; but after my absence of six weeks I saw the Mercury was risen to the middle of the Gage; and having taken out the meat, I found it of a very ill smell.

Two days after, I included a piece of *raw Beef* and a Gage with it, and I saw, that in two days the Quicksilver was risen an inch in the Gage; and after six weeks absence, I found, the Mercury was got almost to the top of the Gage, and that this meat had contracted a much worse smell than that which had been roasted.

I also kept for *fifteen* days a piece of *fresh Butter* in *vacuo*, and I found, that it smelt more strong than when I first put it in: But yet it could be still eaten upon bread; whereas another piece of Butter, which at the same time I had kept in the Air, was altogether unfit to be eaten.

These are almost all the Experiments I have made touching the Conservation of Bodies in *vacuo*. The Gentlemen of our *Royal Academy*, who saw most of them *July* last, thought them worthy to be entred in their Register, esteeming, that besides the consequences they might afford for Natural Philosophy, some other utilities might also be drawn thence. For, since that some Bodies do better keep there than others, some may possibly be found, that will keep there altogether well, and others that will there keep well enough to be transported into places where they could not be had else.

A Letter of Mr. Flamsteed, Professor Regius of Astronomy in London, to Sir Jonas Moor Knight, &c. containing his Observations of the late Lunar Eclipse, on Decemb. 21. 1675.

Illustri Viro

Domino Jonæ Moor, Equiti Aurato, Rei Tormentariæ per Angliam & Hiberniam Supervisori Generali, Joh. Flamstedius, Bene agere & rectè valere.

Nisi Cælum à Meridie, hunc Defectum præcedente, nubibus densissimis, pluviâ continuâ, & vento validissimo inhorrescens, omnem ferè spem optatæ serenitatis abstulisset, iterque huc per flumen adnavigantibus periculosum admodum recididisset, plus tibi propter Mini-
stræ

stri tui peritioris promissam societatem, hac Observatio debuisset; quem cum Tempestas Londini detinuerit, servum adhibere coactus fui, quo vix rudior esse potest, paucioribusque quam secus vellem animadversionibus meipsum habere contentum. Circa sextam pomeridianam separatae adco nubes, ut per praterlabentium hiatus Lunam aliquando languide, per vapores crassiusculos, emicantem cernere liceret; exinde spem concepì aliquam, ejus ad 20^{am} Martii appulsum circa octavam observandi; sed vapores facti densiores, & recurrentes frequentiores nubes, eam reddidere frustraneam: Nolui tamen omnem spem abjicere defectum observandi, sed cum servo ad undecimam evigilavi; tunc autem cum Luna per aliquod tempus sub nubibus accumulatis fuisset abscondita, pluresque continuo ex Africo nubes exorirentur, quibus undique subiectum Caelum, ut nulla spes futura serenitatis esset residua, frustra, si diutius morarer, me fore putavi: Servo propterea ad me evigilandum relicto, domum me contuli; postquam ipsi injunxeram, ut, si qua melioris spes serenitatis effulgeret, me veniret accersitum: Sed vix duas horas decubueram, cum me expergefactum venit, clarè nunc splendere Lunam, elatà & mihi optatà voce nuncians. Experrectus, per cubiculi fenestram Lunæ limbum penumbris offuscatum vidi; ad instrumenta propterea properans, Ipsi jam diametrum ad digitum ferè unius quantitatem deficientem invenì; exinde sequentes novempedali tubo habui observationes; Lunà tardè plerunque per vapores emicante, qui adeo penumbram aggravare visi sunt, ut difficillimum esset eam ab umbra vera discriminare, nubibus etiam interdum recurrentibus, & impredientibus.

*Hora correctia
horologii.*

Decembris 21. p. m.

<i>h</i>	<i>'</i>	<i>"</i>	
14.	29.	30	<i>Inter Cuspides 2085=17'. 16".</i>
14.	55.	45	<i>Hæmum fere tetigit.</i>
15.	00.	30	<i>Hæmum certe tetigerit.</i>
15.	11.	30	<i>Cuspis dexter à Mareotide 1235=10'. 14".</i>
15.	35.	00	<i>Partes lucidæ circiter 2800=23. 11. vel paulo forsan amplius; difficile enim erat admodum, umbra veræ terminos per aerem, vaporibus sædatum, de- finire.</i>
15.	42.	30	<i>Umbra prope Macram.</i>
15.	52.	45	<i>Inter cuspides circiter 2288=18'. 57".</i>
16.	07.	15	<i>FINIS: Limbus enim apparuit, & nihil videbatur in rotunditate Lunæ desiderari. Limbus</i>

16.	08.	00	Limbus admodum dilucidè per tubum conspectus.
16.	15.	30	Penumbra, qua nudis oculis Eclipsin referebat.
16.	19.	30	2 ^a capta diameter 3757=31'. 05". sed vix satis certa; ventus enim fortior tubum hinc inde agitans, haud ad- eò stabilem eum tenere permisit ut iterari potuerit & accuratior fieri Mensura; quum tamen haud multum à veritate abesse putem.
16.	23.	00	Etiamnum, & postea, limbus ab Eclipsi derelictus obscu- rior videbatur ac alter: Deinde capi
Corfica à limbo 2 ^a remoto distantiam			2737=22'. 37".
limbus ejus proximus à proximo lunæ			1045=8. 39.
Sine limbus remotior à Luna proximo			599=4. 58 bona.
Lacus nigri majoris Medium à limbo proximo			452=3. 45.

Notavi præterea.

Quòd umbra semper longe distinctior apparuit ad cornua quàm alt-
cubi in facie Lunæ: In prima observatione, vel paulo antè, Cornua
fuère horizonti parallela.

Tunc etiam Porphyrites, & Lacus Niger Major, aequaliter ex um-
bra extitère, longitudinem scilicet circiter Mareotidis.

Nunquam tamen Porphyriten superavit in hac Eclipsi; altè il-
lum in penumbrammersum vidì, sed tempus, adjuvatore perito destitutus,
notare non potui.

In summa Eclipsi ad Corficam ferè umbra pertigerit; nunquam
tamen eam extinctam vidì, sed altè adè in penumbra immersam, ut
agrè eam potuerim discernere: Sed impedièbat forsàn aer; clari-
rèmq; & ab umbra credo viderint remotiorem, quibuscunque in aere
defectatōre defectam hunc considerare contigerit.

Nec unquam umbra vera Insulam Macram pervagabatur, sed
Penumbra duntaxat densa, per quam difficile erat ipsam perci-
pere.

Imminente exitu in eam intentus, servum elatà voce minuta ab
horologio indicata pronuntiare jussi, quo facilius in proxima camera
momenta observationum cognoscerem. Sic hora 16^h. 05^m. 1^s etiamsi aer
peropportunè factus fuerit serenior, limbum tamen videre non potui;
nec cum numeraret 16^h. 6^m. 1^s; sed hora 16. 7. videre me putabam
limbi lucem sed languidissimam, & agrè admodum; hora 16^h. 7. 15".

certior

certior factus sum ex umbris emeruisse, nec aliquid in ejus rotunditate desiderari: Ergo tunc Finem observatum statuo. Horâ 16^h. 8'. dilucidè admodùm limbus apparuit.

Exibat umbra juxta Lacum hyperboreum superiorem manente Penumbra, quæ Eclipsin nudis oculis exhibebat usque 16^h. 15¹/₂; sed limbus ab Eclipsi derelictus limbi oppositi claritudinem recuperavit non nisi hora 16^h. 28'. vel serius.

Tempora phasium correctâ, ab Altitudinibus Arcturi & Lucidæ Coronæ, Quadrante Telescopico, pedum trium & amplius Radio, capitis; quibus, clarè aliquanâo in altero Cæli cardine emicantibus, captandis incubui, quoties Lunam subiere nubes.

Initium Eclipsis accidit antequam ad Instrumenta veni: Quod tamen Londini in vico Wintoniensi observavit Edmundus Halleus, cum Lunæ limbus superior à vertice distaret gradus 39°. 51'; unde horam supputavit 14^h. 16'. alto eodem 41. 1 Cornu horizonti parallela. 14. 25.

54. 12 ————— 15. 58; cum unum vel alterum minutum deficeret, in diametro Lunæ ipsam Nubes subiere, sub quibus delituit, donec ex umbrâ penitus evaserat; sic ipsi non conspectus fuit finis; ut neque Johanni Coelsono, qui in vico Wappingensi, ad Anachoresin, (Angl. the Eremitage,) limbum Lunæ deficientem aliquantulum vidit hor. 14^h. 17³/₄; nubibus tamen impeditus finem videre non potuit; è quibus tamen cum eluctata esset hor. 16^h. 9'. 25'. ex umbra vera ipsam exiisse comperit, densâ duntaxat Penumbra remanente.

Quomodo calculus meus cum his observationibus consentiat, in alia Epistola ostendam: Quomodo Exterorum observationes, puriori forsan aere factæ, tum iis congruant, scire plurimum cupio, & quotidie audire expecto. Tu interea, Vir dignissime, res, ut capisti, Astronomicas promovere, mihi que favere. perge.

Greenovici, Decemb. 24.

1675.